

**MULTI-CLIENT VIRTUAL ADDRESS TRANSLATION SYSTEM  
WITH TRANSLATION UNITS OF VARIABLE RANGE SIZE**

**ABSTRACT OF THE DISCLOSURE**

A virtual address translation table and an on-chip address cache are usable for translating virtual addresses to physical addresses. Address translation information is provided using a cluster that is associated with some range of virtual addresses and that can be used to translate any virtual address in its range to a physical address, where the sizes of the ranges mapped by different clusters may be different. Clusters are stored in an address translation table that is indexed by virtual address so that, starting from any valid virtual address, the appropriate cluster for translating that address can be retrieved from the translation table. Recently retrieved clusters are stored in an on-chip cache, and a cached cluster can be used to translate any virtual address in its range without accessing the address translation table again.

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